Partners in a silicon carbide future

II-VI Inc, SemiSouth Laboratories Inc and Mississippi State University (MSU) are partnering to establish a SiC substrate manufacturing facility in Starkville, USA. II-VI will provide its production expertise in SiC substrates, with SemiSouth supplying advanced SiC epitaxial growth technology. SiC is often used in high-voltage, high-temperature electronic applications, including radar, power conversion and RF transistors.

Carl J. Johnson, chairman and CEO of II-VI Inc, said: "Anticipating continued success and market growth, we are now entering a new phase of our business as we prepare for the scale-up to high volume production. II-VI is looking forward to partnering with Mississippi State University and SemiSouth in this highly productive initiative."

MSU spin-off SemiSouth is located on the Thad Cochran Research Technology and Economic Development Park, adjacent to MSU's campus. Initially, II-VI will establish a manufacturing facility at the park's 25,000 square foot Ralph E. Powe Center for Innovative Technology, where SemiSouth is already based.

Jeff Casady, SemiSouth's president, said: "The accessible market for silicon carbide in high-performance power electronics, as well high-temperature and harsh environment applications, is really beginning to grow, and the II-VI/SemiSouth partnership is well positioned to serve key customers in those markets."

II-VI Inc also announced it had made an investment in SemiSouth, but did not disclose details of the transaction.

Beating the heat with boron nitride

GE Advanced Materials has developed PolarTherm XLR boron nitride fillers to help overcome the challenge semiconductor manufacturers face in achieving effective heat dissipation.

PolarTherm XLR materials are spherical agglomerates of boron nitride crystals which, when loaded into a polymer, can deliver up to two times the thermal conductivity of other boron nitride fillers, it is claimed.

According to GE, the filler is much less sensitive to processing, resulting in less particle breakdown and a more consistent thermal path for conducting heat from a source, such as a semiconductor, to a sink. This helps thermal interface material producers to significantly reduce the thermal resistance of their products.

PolarTherm XLR spherical boron nitride is currently available from GE in two grades. PTX25 is a 25-micron mean-particle size grade, and PTX60 has a mean particle size of 60 microns. These materials are aimed at premium thermal interface applications.

"GE's new PolarTherm XLR isotropic fillers address one of the most difficult challenges facing chip manufacturers - how to keep pace with the increasing heat generated by smaller and faster semiconductors," said Greg Strosaker, industry manager, Electronic Materials, GE Advanced Materials. "Better heat dissipation plus high particle strength provided by GE's PolarTherm materials offer the industry greater design flexibility and an important competitive advantage."

Panalytical opens lab in Shanghai

Panalytical, a supplier of analytical instrumentation and software for X-ray diffraction (XRD) and X-ray fluorescence spectrometry (XRF), opened its new Regional Application Laboratory, located in Shanghai, China.

Mr. Anant Bhide, GM of Panalytical Asia Pacific, said: "With great pride, we can state our growth in China outstrips the national, regional and industrial averages. This growth has been fuelled by several factors. The first of which is the growth in China's local industry and research. The second is China's increasing status as one of the world's largest exporters. With the tightening and standardisation of rules and regulations governing international trade, Chinese manufacturers and suppliers have found an increasing need to conform to these. Global developments also make it imperative to further strengthen research and development and industrial process control."

The new laboratory will provide Panalytical's existing and prospective customers with the opportunity to test and assess the technology before they buy, and gain an understanding of each of the solutions Panalytical offers.

Panalytical's experts offer help with developing analytical methods and solutions based on customer requirements. The team will add value, providing customised solutions and joint development programmes on methods, standards and analyses.

All Panalytical labs are networked to share information and best practices. Furthermore, the application laboratory will collaborate with non-Panalytical and customer labs locally in order to meet the needs of customers. Customers will also be supported with courses and training facilities.

JM appoints sales representative

Johnson Matthey's Gas Purification Technology (GPT) group has appointed Steele Tech, headquartered in Northridge, California as a sales representative for its line of PureGuard gas purification equipment. Steele Tech will represent Johnson Matthey throughout Southern California.

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